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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,486	09/21/2004	James S. Dunn	BUR920040097US1	5485
45601 7590 01/03/2007 SCULLY, SCOTT, MURPHY & PRESSNER 400 GARDEN CITY PLAZA GARDEN CITY, NY 11530			EXAMINER KIM, SU C	
			ART UNIT 2823	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
2 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/711,486

Applicant(s)

DUNN ET AL.

Examiner

Su C. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 18-23, 25 and 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 24 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

HSIEN-MING LEE
PRIMARY EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

12/26/06

DETAILED ACTION

Election/Restrictions

1. Claims 18-23 & 25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected specie, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/18/2006.

Applicant's election without traverse of species I (Clams 1-17 and 24) in the reply filed on 10/18/2006 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "base layer is monocrystalline over the collector and polycrystalline over the trench isolation regions" claimed in claim 1, lines 4-5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

3. Claims 1-17 and 24 allowed over prior art.

Pertaining claims 1 & 24, Burghartz et al. (US 5059544) discloses forming a pedestal atop structure that is comprising at least base layer (Fig. 5, 18, 21, 22) located on a surface of substrate (Fig. 4, 12) having a collector and trench isolation regions (16) located therein, wherein said base layer is monocrystalline (single crystalline silicon 20) over the collector and polycrystalline (22) over the trench isolation regions; Forming an extra base layer over said structure (Fig. 4, 31 & 24) including pedestal wherein said extra base layer comprising monocrystalline material (34) over the substrate and polycrystalline material over the pedestal (Fig. 7, 52) and said base layer that is polycrystalline, said polycrystalline material over said pedestal is thinner than the polycrystalline material over said base layer that is polycrystalline (Fig. 7, thickness of 52 is thinner than the thickness of polysilicon 18)

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However, Burghartz fails to teach converting at least said polycrystalline material over said pedestal of said extra base layer into an oxide utilizing a low temperature process that is performed at a temperature of about 700°C or less; removing said oxide and said pedestal from said structure to provide an emitter opening; and forming at least a polysilicon emitter in said emitter opening.

Reasons for Allowance

4. The following is a statement of reasons for the indication of allowable subject matter:

After further search and consideration it is determined that the prior art of record neither anticipated nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach “converting at least said polycrystalline material over said pedestal of said extra base layer into an oxide utilizing a low temperature process that is performed at a temperature of about 700°C or less;

removing said oxide and said pedestal from said structure to provide an emitter opening; and

forming at least a polysilicon emitter in said emitter opening” as recited in claim 1 and “converting at least said polycrystalline material over said oxide pedestal of said extra base layer into an oxide utilizing a low temperature oxidation process;

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removing said oxide and said oxide pedestal from said structure using a single etching process to provide an emitter opening;

forming an oxide layer on exposed surfaces using a second low temperature oxidation process;

forming a nitride spacer within said opening;

removing said oxide layer from a bottom surface of said emitter opening exposing said base layer; and

forming at least a polysilicon emitter in said emitter opening" as recited in claim 24

Claims 2-17 are also allowed as being directly or indirectly dependent of the allowed base claim(s).

Conclusion

This application is in condition for allowance except for the following formal matters:

Drawing objection on paragraph 2

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Su C. Kim whose telephone number is (571) 272-5972. The examiner can normally be reached on Monday - Thursday, 9:00AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Su C. Kim
12/19/2006

HSIEN-MING LEE
PRIMARY EXAMINER

12/26/06